

# STONE, DIMENSION

By Thomas P. Dolley

**Domestic survey data and tables were prepared by Samir Hakim, statistical assistant.**

Dimension stone is a natural rock material quarried for the purpose of obtaining blocks or slabs that meet specifications as to size (width, length, and thickness) and shape (Barton, 1968, p. 4). Color, grain texture and pattern, and surface finish of the stone are also normal requirements by both customers and the stone industry. Durability (essentially based on mineral composition, hardness, and past performance), strength, and the ability of the stone to take a polish are other important selection criteria.

Although various igneous, metamorphic, and sedimentary rocks are used as dimension stone, the principal rock types are granite, limestone, marble, sandstone, and slate. Other varieties of dimension stone that are normally considered to be special minor types include alabaster (massive gypsum), soapstone (massive talc), and various products fashioned from natural stone.

U.S. production of dimension stone in 2002 was estimated to be 1.26 million metric tons (Mt) valued at \$254 million, which was about a 3.4% decrease in value compared with that of 2001. U.S. production tonnage of dimension stone in 2002 increased by 3.3% compared with that of 2001. Exports decreased by about 12% in value to \$64.4 million, and imports for consumption increased by 11% in value to about \$1.2 billion. The value of apparent consumption was estimated to be \$1.38 billion.

In recent years, most dimension stone has been used in construction applications with the largest portions being sold or used as ashlar and partially squared pieces, curbing, flagstone, and rough block for building and construction. Monumental stone, another major type, includes memorials of various kinds.

Dimension stone production data for the United States are derived by the U.S. Geological Survey (USGS) from a voluntary canvass of U.S. quarry producers of rough and dressed dimension stone. Data in this report cover rough crude quarried stone, irregular-shaped and rectangular blocks, and more highly processed stone. A number of other terms also are used to describe further processing, such as “worked,” “dressed,” “finished,” and “manufactured.” These and other terms used by the dimension stone industry describe such features as the mineral composition of the rock, the shape of the product, the method of finishing a stone, and the type of finish applied (Stone World, 2002, p. 106-139). No adjustments are made in the data to account for the sometimes substantial losses in processing rough stone into dressed stone. Sold or used data are considered to be equivalent to production because changes in stocks are not surveyed. Of the 220 producing dimension stone operations included in the survey for 2002, 103 (47%) responded, which represented 59% of the tonnage; the remaining tonnage was estimated based, in part on prior years’ reporting (table 1).

## Description and Terminology

Scientific and commercial descriptions of various dimension stone types overlap. The scientific description of dimension stone types is focused primarily on the stone’s geographic locality and mineralogical composition, whereas the commercial description is focused primarily on the locality and color of the stone. Furthermore, various combinations of the scientific and commercial descriptions are used by stone producers to market their stone products effectively. The descriptions that follow were adapted from Currier (1960, p. 1-10) and Barton (1968, p. 2-8).

**Granite.**—Commercial granites include all feldspathic crystalline rocks of mainly interlocking texture and with individual mineral grains that are visible to the naked eye. This category includes such rock types as anorthosite, gneiss, granodiorite, monzonite, syenite, and all other intermediate igneous and coarse-grained metamorphic rock types. Primary colors of granites are white, gray, pink, and red; green and brown are secondary colors. Although black granites are also included in this category and range in color from dark gray to black, they are not true granites mineralogically but rather mafic rocks, such as diabbases, diorites, gabbros, and similar rocks.

**Limestone.**—Commercial limestones are rocks of sedimentary origin that primarily comprise calcium carbonate with or without magnesium. Included in this category are calcitic limestone, dolomite, dolomitic limestone, and travertine, which is a calcitic rock that is precipitated from hot springs.

**Marble.**—Commercial marble includes metamorphosed limestones and serpentine rocks, all of which are capable of taking a polish. An important member of this classification is serpentine marble, which is also known as verde antique, and comprises green-to-black serpentine, which is a hydrous magnesium silicate mineral that is crisscrossed by veins of lighter minerals, such as calcite or dolomite.

**Sandstone.**—Commercial sandstone is a lithified sand that comprises chiefly quartz or quartz and feldspar with a fragmental (clastic) texture. Sandstone contains interstitial cementing materials, such as calcite, clay, iron oxides, or silica. Arkose (abundant feldspar grains), graywacke (abundant rock fragments), and conglomerates are included in this category. Other members of this category include bluestone, which is a dense, hard, fine-grained feldspathic sandstone that splits easily along planes into thin, smooth slabs; brownstone, which is feldspathic sandstone of brown to reddish-brown color owing to abundant iron oxide; and flagstone, which is a sandstone or slate, typically red, tan or gray, that splits into large, thin slabs.

**Slate.**—Commercial slate is a microgranular metamorphic rock formed by the recrystallization of clay sediments, such as claystone, shale, or siltstone. Characterized by excellent parallel cleavage, slates may be easily split into relatively thin slabs.

**Greenstone.**—Commercial greenstones are the result of the metamorphosis of basaltic rocks. Greenstone is named because of the predominance of greenish minerals, such as actinolite, chlorite, or epidote.

**Basalt and Traprock.**—Commercial basalt and traprock includes igneous rocks that are too fine grained to be termed “black granite.” The name traprock is derived from the Swedish word “trappa,” which means step, because of the characteristic terraced or steplike appearance of certain basalt lava fields. This category includes extrusive igneous rocks, such as andesite, basalt, or dacite, and intrusive igneous rocks, such as amphibolites, diabase, diorites, fine-grained gabbros, peridotites, and pyroxenites.

**Miscellaneous.**—This category includes commercial dimension stone types that do not easily fall into the aforementioned categories, such as soapstone, steatite, or talc, which contains various amounts of the mineral talc. Additional miscellaneous dimension stones include diatomite, mylonites, pumice, schist, tripoli, tuff, porous or scoriaceous volcanic rocks, or any other rocks used as building stones.

## Production

Rough stone blocks split or cut from a quarry face are transported to processing plants that are frequently located at the quarry site, at least for preliminary sizing. Further dressing, which includes final sizing and finishing operations, such as decorating, edging, and polishing, also may be done at the quarry site.

In 2002, granite accounted for 431,000 t (34%) of the total domestic dimension stone production of 1.26 Mt, followed by limestone (28%), sandstone (16%), marble (5%), slate (1%), and miscellaneous stone (16%). Granite accounted for about \$109 million (43%) of total domestic production of \$254 million, followed by limestone (27%), miscellaneous (10%), sandstone (9%), marble (7%), and slate (4%).

Production was reported in 34 States and Puerto Rico. Leading producer States, in descending order by tonnage, were Indiana, Georgia, Vermont, Wisconsin, and Massachusetts. These States accounted for 49% of the domestic production. The leading producer States, in descending order by value, were Indiana, Vermont, South Dakota, Wisconsin, and Georgia. These States contributed about 50% of the value of domestic production (table 3).

The top five producing companies were Buechel Stone Corp. in Wisconsin; Fletcher Granite Co., Inc. in Massachusetts and New Hampshire; Indiana Limestone Co., Inc. in Indiana; Oolitic Victor Stone Co. in Indiana; and Rock of Ages Corp. in New Hampshire and Vermont. These companies produced about 29% of domestic production in tonnage and about 25% of production value. The leading 14 companies accounted for 56% of total domestic tonnage and 57% of the value.

**Granite.**—Dimension granite was produced by 37 companies operating 56 quarries in 17 States. Production was 431,000 t and was valued at \$109 million. Granite production tonnage increased by 5.6%, and the value increased by about 2% compared with those of 2001. The top five producing States, in descending order by tonnage, were Massachusetts, Georgia, Vermont, South Dakota, and New Hampshire. Massachusetts accounted for 19% of the tonnage of U.S. granite production. Massachusetts and Georgia combined accounted for 20% of the value of the U.S. granite production (table 4).

Cold Spring Granite, Fletcher Granite, and Rock of Ages, which were the leading producers, accounted for 50% of U.S. granite production in tonnage and 48% of U.S. granite production in value.

**Limestone.**—Dimension limestone was produced by 29 companies from 30 quarries in 9 States. Production increased by about 12% to 359,000 t from 321,000 t in 2001, and the value increased by 1.7% to \$70 million from \$68.8 million in 2001. The top five producing States, in descending order by tonnage, were Indiana, Texas, Minnesota, Wisconsin, and Oklahoma. Indiana produced 65% of the U.S. tonnage and 56% of the value (table 5).

Buechel Stone, Elliott Stone Co. Inc., Independent Limestone Co., Indiana Limestone, and Oolitic Victor Stone, which were the leading producers, accounted for 72% of all U.S. limestone tonnage and about 28% of the value.

**Sandstone.**—Dimension sandstone was produced by 23 companies that operated 26 quarries in 16 States. Production increased to 198,000 t in 2002 from 186,000 t in 2001. The value decreased slightly to \$23.1 million in 2002 from \$23.5 million in 2001. The top five producing States, in descending order by tonnage, were Arizona, New York, Ohio, Colorado, and Arkansas (table 6).

American Sandstone, Finger Lakes Stone Co. Inc., Hackett Quarry Co., Loukonen Brothers Stone Co., and Waller Brothers Stone Co., which were the leading producers, accounted for about 65% of the tonnage and 49% of the value of domestic production.

**Marble.**—Marble was mined by five companies that operated seven quarries in five States. Production increased in 2002 to 66,500 t valued at \$19.6 million from 61,400 t valued at \$18.9 million in 2001 (table 10). Georgia was the leading producing State, followed by Vermont, Tennessee, Colorado, and Alabama. The leading producers were Georgia Marble Co., Tennessee Marble Co., and Vermont Quarries Co. Additional data have been withheld to avoid disclosing company proprietary information.

**Slate.**—Slate was produced by 10 companies that operated 12 quarries in 5 States. Production decreased to 18,700 t in 2002 from 23,900 t in 2001. The value decreased by about 23% to \$11.5 million in 2002 from \$14.9 million in 2001 (table 12). The producing States, in descending order by tonnage, were Vermont, Pennsylvania, North Carolina, California, and New York. The leading producers were U.S. Quarried Slate Products Inc., Quarry Slate Industries Inc., Williams and Sons Slate and Tile Inc., Pennsylvania Big Red Slate Co. Inc., and Jacob’s Creek Stone Co. Inc. Additional data have been withheld to avoid disclosing company proprietary information.

## Consumption

Rough stone represented about 52% of the tonnage and 41% of the value of all dimension stone sold or used by domestic producers, which included exports. The largest uses of rough stone, by tonnage, were in construction (44%) and irregular-shaped stone (23%) applications. Dressed stone represented 48% by tonnage and 59% by value of the total stone sold or used. The largest uses of dressed stone, by tonnage, were in flagging (26%), curbing (21%), and ashlar and partially squared pieces (15%) (table 7).

Uses for the different varieties of dimension stone varied considerably. The major uses of granite sold or used in 2002, by tonnage, were in curbing (30%), monumental rough stone (23%), monumental dressed stone (15%), and rough blocks for construction (12%) (table 8). Primary uses of limestone, by tonnage, were in rough blocks for building and construction (51%) and ashlar and partially squared pieces (15%) (table 9). Primary uses of marble, by tonnage, were dressed stone for slabs and blocks, flagging, monumental, panels and veneer, ashlar and partially squared pieces, tile, and unspecified and unlisted uses (53%) and rough blocks for building and construction (27%) (table 10). Primary uses of sandstone, by tonnage, were in dressed stone for flagging (63%) and rough blocks for building and construction (15%) (table 11). Dimension slate sold or used by producers in the United States in 2002, by tonnage, was principally for flooring (48%), roofing (18%), and flagging (15%) (table 12).

Overall, the value of apparent consumption of dimension stone in the United States was estimated to be \$1.38 billion in 2002; this was an increase of about 10% compared with that of 2001. Apparent consumption is defined as production plus imports for consumption minus exports. Value data are used in the apparent consumption calculation because tonnage data are not available for imports and exports. Also, changes in industry stocks are not considered because the data are not available.

## Prices

The average 2002 value for dimension stone was \$201 per metric ton; this was a decrease of 7% from that of 2001 based on the USGS canvass. The average unit values per metric ton for different types of dimension stone were granite, \$252 per ton; limestone, \$194 per ton; sandstone, \$116 per ton; marble, \$294 per ton; and slate, \$614 per ton. Available price data show considerable variation. Prices are substantially different not only for the kind of stone, but also for the appearance of the same kind of stone. Color, grain structure, and finish contribute significantly to price and marketability.

## Foreign Trade

**Exports.**—In 2002, total exports of dimension stone decreased in value by about 12% to about \$64.4 million compared with those of 2001; granite accounted for 68% of the export value. The largest share of granite was exported to China (table 13). Although unreported, a significant amount of granite was probably reexported back to the U.S. market.

**Imports.**—The value of imports for consumption of dimension stone types increased in 2002 by 11% to \$1.19 billion. Italy, which continued to be the major single source of granite, accounted for 35% of granite imports by value. Other important granite import sources included Brazil (23%), India (14%), and China (9%) (table 14). Italy also was a major source of rough and dressed marble imports (tables 15, 16). Duties on imported dimension stone are listed in table 2.

## World Review

World dimension stone production, which excluded that of the United States, was estimated to be approximately 76 Mt in 2002; this was an increase of about 400,000 t compared with that of 2001. Although there was probably some small-scale production in the majority of the world's nations, dimension stone was produced and officially reported in about 35 countries. The top five producing countries in 2002, in descending order by tonnage, were China, Italy, India, Iran, and Spain. These countries accounted for about 73% of the world's production. The United States ranked 11th in world production of dimension stone in 2002 (Internazionale Marmi e Macchine Carrara S.p.A., 2003<sup>1</sup>).

## Outlook

Dimension stone sales during the near term are expected to remain level. For residential and office building construction, growth in the use of dimension stone is expected in new prestige markets for home improvement as well as in renovations to attract and keep tenants. Conversely, some sectors of the stone industry report a lack of skilled labor at quarries and that, in recent years, competent masons have left the stone industry for more lucrative and higher paying building projects, such as courthouses, schools, and restorations.

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<sup>1</sup>A reference that includes a section mark (§) is found in the Internet Reference Cited section.

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TABLE 1  
SALIENT U.S. DIMENSION STONE STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

	1998	1999	2000	2001	2002
Sold or used by producers: <sup>2</sup>					
Quantity	1,140	1,250	1,320	1,220	1,260
Value	\$225,000	\$254,000	\$235,000	\$263,000	\$254,000
Exports, value	\$59,600	\$54,500	\$59,800	\$73,500	\$64,400
Imports for consumption, value	\$698,000	\$808,000	\$986,000	\$1,070,000	\$1,190,000

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Includes Puerto Rico and other U.S. possessions and territories.

TABLE 2  
U.S. IMPORT DUTIES ON DIMENSION STONE

Tariff item	Harmonized Tariff Schedule of the United States	Normal trade relations (NTR) January 1, 2002	Non-NTR January 1, 2002
Slate, rough blocks or slabs	2514.00.0000	Free	25% ad valorem.
Rough blocks or slabs of marble, travertine, other calcareous monumental or building stone	2515.00.0000		
Marble and travertine:			
Crude or roughly trimmed	2515.11.0000	Free	\$22.95 per cubic meter.
Marble, merely cut	2515.12.1000	do.	13% ad valorem.
Travertine, merely cut	2515.12.2000	3.0% ad valorem	50% ad valorem.
Other calcareous stone alabaster	2515.20.0000	do.	Do.
Rough blocks or slabs of granite, porphyry, basalt, sandstone, other monumental or building stone	2516.00.0000		
Granite:			
Crude or roughly trimmed	2516.11.0000	Free	\$8.83 per cubic meter.
Merely cut	2516.12.0000	2.8% ad valorem	60% ad valorem.
Sandstone:			
Crude or roughly trimmed	2516.21.0000	Free	\$5.30 per cubic meter.
Merely cut	2516.22.0000	3.0% ad valorem	50% ad valorem.
Other monumental or building stone	2516.90.0000	do.	Do.
Setts, curbstones, flagstones	6801.00.0000	2.8% ad valorem	60% ad valorem.
Worked monumental or building stone:	6802.00.0000		
Tiles and cubes under 7 centimeters square, granules	6802.10.0000	4.8% ad valorem	40% ad valorem.
Other stone and articles with a flat or even surface:			
Marble, travertine, and alabaster:	6802.21.0000		
Travertine	6802.21.1000	4.2% ad valorem	50% ad valorem.
Other	6802.21.5000	1.9% ad valorem	13% ad valorem.
Other calcareous stone	6802.22.0000	4.9% ad valorem	50% ad valorem.
Granite	6802.23.0000	3.7% ad valorem	60% ad valorem.
Other stone	6802.29.0000	6.0% ad valorem	30% ad valorem.
Other:			
Marble, travertine, and alabaster:	6802.91.0000		
Marble:			
Slabs	6802.91.0500	2.5% ad valorem	15% ad valorem.
Other	6802.91.1500	4.9% ad valorem	50% ad valorem.
Travertine articles of subheading 6802.21.1000 that have been dressed or polished, but not further worked	6802.91.2000	4.2% ad valorem	50% ad valorem.
Other	6802.91.2500	3.7% ad valorem	40% ad valorem.
Alabaster	6802.91.3000	4.7% ad valorem	50% ad valorem.
Other calcareous stone	6802.92.0000	4.9% ad valorem	Do.
Granite	6802.93.0000	3.7% ad valorem	60% ad valorem.
Other stone	6802.99.0000	6.5% ad valorem	40% ad valorem.
Worked slate and articles:	6803.00.0000		
Roofing slate	6803.00.1000	3.3% ad valorem	25% ad valorem.
Other	6803.00.5000	Free	Do.

TABLE 3  
DIMENSION STONE SOLD OR USED BY PRODUCERS IN  
THE UNITED STATES, BY STATE<sup>1</sup>

State	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
California	40,200	\$9,540	41,000	\$9,870
Colorado	10,800	2,130	18,200	2,400
Georgia	108,000	26,500	111,000	18,200
Indiana	184,000	35,300	237,000	39,500
Kansas	13,000	4,780	15,100	1,900
Maryland	27,500	3,440	20,500	2,120
Massachusetts	81,400	11,400	80,600	11,300
Minnesota	15,700	11,800	21,600	12,400
Montana	8,990	2,400	11,600	2,620
New Mexico	36,100	1,320	20,200	1,370
New York	47,000	9,040	46,400	5,990
North Carolina	41,500	18,200	41,300	17,900
Ohio	30,700	5,150	30,200	4,990
Oklahoma	16,500	2,190	16,500	2,100
Pennsylvania	50,400	11,600	36,700	11,900
South Carolina	9,300	855	9,230	850
Texas	85,900	12,600	65,300	12,200
Vermont	98,000	26,500	101,000	27,000
Virginia	5,590	626	5,900	651
Wisconsin	98,900	18,900	99,800	19,300
Other <sup>2</sup>	213,000	48,700	229,000	49,700
Total	1,220,000	263,000	1,260,000	254,000

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Alabama, Arizona, Arkansas, Connecticut, Idaho, Maine, Michigan, Missouri, New Hampshire, South Dakota, Tennessee, Utah, Washington, West Virginia, and Puerto Rico and other U.S. possessions and territories.

TABLE 4  
 DIMENSION GRANITE SOLD OR USED BY PRODUCERS IN  
 THE UNITED STATES, BY STATE<sup>1</sup>

State	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
California	17,300	\$5,750	17,300	\$5,810
Georgia	69,400	8,710	77,700	10,000
Massachusetts	81,400	11,400	80,600	11,300
South Carolina	9,230	855	9,230	850
Wisconsin	2,310	2,060	3,240	2,420
Other <sup>2</sup>	228,000	77,900	243,000	78,900
Total	408,000	107,000	431,000	109,000

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Maine, Minnesota, Missouri, New Hampshire, New York, Oklahoma, North Carolina, Pennsylvania, South Dakota, Texas, Vermont, Virginia, and Puerto Rico and other U.S. possessions and territories.



TABLE 5  
 DIMENSION LIMESTONE SOLD OR USED BY PRODUCERS IN  
 THE UNITED STATES, BY STATE<sup>1</sup>

State	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Indiana	182,000	\$35,200	235,000	\$39,500
Kansas	12,000	4,680	12,300	1,560
Wisconsin	W	W	W	W
Other <sup>2</sup>	128,000	28,900	112,000	29,000
Total	321,000	68,800	359,000	70,000

W Withheld to avoid disclosing company proprietary data; included with "Other."

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Arkansas, California, Minnesota, Ohio, Oklahoma, Texas, and States indicated by symbol W.

TABLE 6  
 DIMENSION SANDSTONE SOLD OR USED BY PRODUCERS IN  
 THE UNITED STATES, BY STATE<sup>1</sup>

State	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
New York	42,100	\$4,710	44,300	\$4,660
Pennsylvania	7,390	877	2,390	364
Other <sup>2</sup>	137,000	17,900	151,000	18,100
Total	186,000	23,500	198,000	23,100

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Arizona, Arkansas, California, Colorado, Idaho, Kansas, Michigan, New Mexico, Ohio, Oklahoma, Utah, Virginia, West Virginia, and Wisconsin.

TABLE 7  
DIMENSION STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE<sup>1,2</sup>

Use	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	237,000	\$40,100	290,000	\$38,900
Irregular-shaped stone	161,000	23,800	151,000	19,800
Monumental	162,000	26,800	146,000	26,100
Other <sup>3</sup>	55,500	17,800	66,100	20,300
Dressed stone:				
Ashlars and partially squared pieces	83,000	15,200	94,100	18,500
Slabs and blocks for building and construction	22,700	5,660	25,600	6,380
Monumental	57,600	34,200	64,400	29,600
Curbing	127,000	21,700	130,000	22,000
Flagging	157,000	16,800	156,000	16,700
Flagging (slate)	2,450	843	2,800	945
Roofing slate	8,230	8,260	3,450	5,260
Structural and sanitary	2,340	2,630	2,290	2,560
Flooring slate	9,450	2,070	9,040	1,970
Other <sup>4</sup>	138,000	46,900	117,000	45,600
Grand total	1,220,000	263,000	1,260,000	254,000

<sup>1</sup>Includes Puerto Rico and other U.S. possessions and territories.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Includes flagging (2001), exports, uses not specified, and uses not listed.

<sup>4</sup>Includes panels and veneer, tile, blackboards, exports, uses not specified, and uses not listed.

TABLE 8  
DIMENSION GRANITE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE<sup>1</sup>

Use	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	48,000	\$8,380	52,300	\$9,040
Irregular-shaped stone	1,010	114	1,570	235
Monumental	101,000	18,900	99,800	19,300
Other <sup>2</sup>	51,800	17,300	60,500	19,500
Dressed stone:				
Ashlars and partially squared pieces	5,230	1,890	1,380	838
Slabs and blocks for building and construction	973	825	1,610	1,340
Monumental	53,900	29,300	64,100	29,100
Curbing	126,000	21,700	129,000	22,000
Other <sup>3</sup>	19,400	8,260	20,100	7,860
Grand total	408,000	107,000	431,000	109,000

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes exports and uses not listed.

<sup>3</sup>Includes panels and veneer, tile, uses not specified, and uses not listed.

TABLE 9  
DIMENSION LIMESTONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE<sup>1</sup>

Use	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	134,000	\$20,600	184,000	\$23,400
Irregular-shaped stone	15,100	4,510	11,000	963
Monumental	19,300	4,990	14,900	3,950
Other <sup>2</sup>	3,700	549	3,700	549
Dressed stone:				
Ashlars and partially squared pieces	45,700	7,430	52,900	8,710
Slabs and blocks for building and construction	17,700	3,590	18,400	3,870
Flagging	13,100	3,660	10,600	4,220
Other <sup>3</sup>	73,100	23,500	63,500	24,400
Grand total	321,000	68,800	359,000	70,100

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes exports and uses not listed.

<sup>3</sup>Includes curbing, panels and veneer, tile, uses not specified, and uses not listed.

TABLE 10  
 DIMENSION MARBLE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE<sup>1,2</sup>

Use	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	17,000	\$8,110	18,300	\$3,830
Other <sup>3</sup>	13,000 <sup>r</sup>	2,510 <sup>r</sup>	13,000	2,500
Dressed stone:				
Slabs and blocks for building and construction	W	W	W	W
Monumental	W	W	W	W
Flagging	W	W	W	W
Tile	W	W	W	W
Other <sup>4</sup>	31,400 <sup>r</sup>	8,270 <sup>r</sup>	35,200	13,300
Grand total	61,400 <sup>r</sup>	18,900 <sup>r</sup>	66,500	19,600

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Dressed stone, other."

<sup>1</sup>Includes Puerto Rico.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Includes monumental, uses not specified, and uses not listed.

<sup>4</sup>Includes slabs and blocks, flagging, monumental, panels and veneer, ashlar and partially squared pieces, tile, uses not listed, and uses indicated by symbol W.

TABLE 11  
DIMENSION SANDSTONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE<sup>1</sup>

Use	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	29,400	\$2,300	29,200	\$2,160
Irregular-shaped stone	13,400	1,590	18,100	2,220
Other <sup>2</sup>	--	--	--	--
Dressed stone:				
Ashlars and partially squared pieces	14,200	1,950	17,000	3,210
Slabs and blocks for building and construction	2,780	843	2,500	751
Curbing	W	W	W	W
Flagging	113,000	10,900	124,000	10,200
Panels and veneer	1,370	341	1,370	341
Other <sup>3</sup>	12,500	5,570	5,780	4,280
Total	186,000	23,500	198,000	23,100

W Withheld to avoid disclosing company proprietary data; included with "Dressed stone, other." -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes flagging and uses not listed.

<sup>3</sup>Includes tile, curbing, exports, uses not specified, uses not listed, and uses indicated by symbol W.

TABLE 12  
DIMENSION SLATE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE<sup>1</sup>

Use	2001		2002	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Flagging	2,450	\$843	2,800	\$945
Roofing	8,230	8,260	3,450	5,260
Structural and sanitary purposes	2,340	2,630	2,290	2,560
Flooring	9,450	2,070	9,040	1,970
Other <sup>2</sup>	1,390	1,110	1,080	772
Total	23,900	14,900	18,700	11,500

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes uses not specified, and uses not listed.



TABLE 13  
U.S. EXPORTS OF DIMENSION STONE, BY TYPE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Type	2001		2002		Major destination in 2002, percentage <sup>2</sup>
	Quantity	Value	Quantity	Value	
Marble, travertine, alabaster worked <sup>3</sup>	25	3,140	32	4,180	Canada, 37%
Marble, travertine--crude or roughly trimmed	2	729	2	677	Canada, 51%.
Marble, travertine--merely cut, by sawing or otherwise <sup>4</sup>	2	915	7	843	Mexico, 26%.
Granite, crude or roughly trimmed	128	42,100	128	39,600	China, 44%.
Granite, merely cut by sawing or otherwise <sup>4</sup>	13	6,290	12	4,210	Taiwan, 22%.
Sandstone, crude or roughly trimmed	8	929	9	994	Canada, 95%.
Sandstone, merely cut, by sawing or otherwise <sup>4</sup>	5	1,280	5	1,150	Canada, 94%.
Slate, worked and articles of slate	NA	10,500	NA	6,330	Bahamas, 24%.
Slate, whether or not roughly trimmed or merely cut <sup>4</sup>	NA	837	NA	621	Canada, 59%.
Other calcareous monumental or building stone; alabaster <sup>5</sup>	12	3,000	13	2,950	Canada, 83%.
Other monumental or building stone <sup>6</sup>	11	3,830	10	2,870	Canada, 81%.
Total	XX	73,500	XX	64,400	

NA Not available. XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>By value.

<sup>3</sup>Further worked than simply cut with a flat surface.

<sup>4</sup>Blocks or slabs.

<sup>5</sup>Crude, roughly trimmed, or merely cut into blocks or slabs. Other than marble and travertine (includes alabaster).

<sup>6</sup>Crude, roughly trimmed, or merely cut into blocks or slabs. Other than calcareous stone and alabaster, granite, sandstone, slate, dolomite, quartzite, and steatite.

Source: U.S. Census Bureau.

TABLE 14  
U.S. IMPORTS FOR CONSUMPTION OF DIMENSION GRANITE, BY COUNTRY<sup>1</sup>

(Thousand dollars)

Country	Dressed									
	Worked granite								Total worked	Total dressed
	Cut to size <sup>2</sup>									
	Rough granite <sup>3</sup>	Simply cut <sup>4</sup>	Not cut to size <sup>5</sup>	Maximum 1.5 centimeters	1.5-7.5 centimeters	Monumental minimum 7.5 centimeters	Building minimum 7.5 centimeters	Other		
2001:										
Argentina	--	71	182	4	1,110	--	30	220	1,550	1,620
Brazil	2,600	6,650	17,000	2,140	40,100	201	1,780	16,000	77,200	83,900
Canada	4,750	2,210	132	2,940	13,000	7,720	11,200	5,780	40,800	43,000
China	1,730	3,990	1,750	6,330	11,400	2,380	3,510	10,800	36,200	40,100
Finland	46	--	--	17	51	--	36	52	156	156
India	1,210	4,670	3,970	6,810	22,000	5,050	6,560	9,550	54,000	58,600
Italy	3,690	13,200	29,800	8,070	91,800	611	9,410	30,400	170,000	183,000
Japan	6	8	--	--	2	8	--	--	10	18
Mexico	224	90	--	81	2,120	--	452	246	2,900	2,990
Norway	48	--	--	17	17	--	87	--	121	121
Portugal	23	112	--	22	169	--	12	247	450	562
Saudi Arabia	--	46	69	14	752	--	15	136	986	1,030
South Africa	1,070	582	47	32	744	34	16	183	1,060	1,640
Spain	423	873	3,220	996	12,500	22	1,050	2,640	20,500	21,300
Other	2,140	1,320	6,570	206	4,700	19	891	3,460	15,800	17,200
Total	18,000	33,800	62,800	27,700	201,000	16,000	35,000	79,700	422,000	456,000
2002:										
Argentina	11	44	153	--	1,020	--	37	222	1,430	1,470
Brazil	3,410	12,200	24,300	4,090	61,500	49	2,250	22,200	114,000	127,000
Canada	4,350	1,310	388	2,840	13,700	7,970	11,800	7,590	44,200	45,500
China	1,130	4,170	2,340	8,710	15,600	2,690	5,830	11,400	46,500	50,700
Finland	4	9	--	10	330	--	--	161	501	510
India	2,530	6,320	6,150	8,980	32,500	6,050	3,210	13,800	70,700	77,100
Italy	3,840	16,300	33,800	10,300	96,300	151	5,540	34,300	180,000	197,000
Japan	3	--	--	--	--	6	3	5	14	14
Mexico	315	410	17	--	1,090	--	51	166	1,320	1,730
Norway	31	--	--	27	610	20	--	25	682	682
Portugal	84	61	24	53	73	--	26	147	323	384
Saudi Arabia	42	188	83	12	1,110	--	3	69	1,280	1,460
South Africa	2,490	247	14	40	1,500	11	24	223	1,820	2,060
Spain	1,180	982	3,760	674	11,800	--	312	3,580	20,100	21,100
Other	1,610	999	9,880	597	8,020	77	623	3,230	22,400	23,400
Total	21,000	43,200	80,900	36,400	245,000	17,000	29,700	97,200	506,000	549,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>One or more faces worked more than simply cut.

<sup>3</sup>Normal quarry products. Includes crude or roughly trimmed and roughly cut by sawing or otherwise. Harmonized Tariff Schedule codes 2516.11.0000, 2516.12.0030, and 2516.12.0060.

<sup>4</sup>Simply cut with a flat even surface. Harmonized Tariff Schedule code 6802.23.0000.

<sup>5</sup>Only one face worked more than simply cut. Harmonized Tariff Schedule code 6802.93.0010.

Source: U.S. Census Bureau.

TABLE 15  
U.S. IMPORTS FOR CONSUMPTION OF MAJOR CATEGORIES OF DIMENSION MARBLE AND OTHER CALCAREOUS STONE,  
BY COUNTRY<sup>1</sup>

Country	Dressed							
	Marble, slabs <sup>2</sup>		Marble, other <sup>3</sup>		Other calcareous stone <sup>4</sup>		Rough marble <sup>5</sup>	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
2001:								
Brazil	1,550	\$1,390	405	\$339	2,080	\$1,730	128	\$89
China	3,240	1,810	28,900	14,900	10,500	6,160	545	543
France	146	250	542	1,160	73,200	21,200	20	137
Greece	6,310	5,880	5,470	5,920	2,990	3,340	6	11
India	1,170	935	1,190	1,930	5,050	1,950	81	67
Israel	1,370	1,440	4,110	3,670	31,200	11,700	76	62
Italy	54,900	50,800	69,900	69,700	115,000	66,300	2,620	2,770
Mexico	1,360	1,240	11,200	11,600	15,300	12,500	178	139
Portugal	1,470	1,020	2,020	1,490	12,700	8,720	24	11
Spain	11,500	8,330	28,300	20,600	72,400	46,700	1,390	937
Taiwan	745	743	2,660	5,030	1,580	903	25	32
Turkey	4,340	3,110	6,430	5,360	11,500	5,220	2,040	1,300
Other	2,960	2,780	11,000	10,500	116,000	29,800	585	654
Total	91,000	79,800	172,000	152,000	470,000	216,000	7,710	6,750
2002:								
Brazil	3,850	1,840	226	193	1,610	795	141	225
China	10,100	5,350	21,900	15,500	22,000	11,300	523	528
France	323	535	356	931	48,200	16,300	215	237
Greece	7,060	6,590	6,470	7,320	2,430	2,460	--	--
India	1,770	1,300	2,040	3,030	2,300	1,540	370	278
Israel	901	733	3,670	3,090	15,300	14,300	427	386
Italy	47,700	47,900	69,400	71,500	79,500	61,300	5,770	3,750
Mexico	1,330	1,060	14,000	15,300	16,600	11,300	271	197
Portugal	1,830	1,240	1,410	1,140	10,600	7,440	148	221
Spain	11,200	7,590	31,100	22,700	79,800	46,600	1,340	879
Taiwan	774	718	2,290	3,770	722	681	104	107
Turkey	6,320	4,320	14,200	9,560	7,230	5,670	3,810	1,900
Other	3,460	3,690	13,700	12,800	51,200	27,900	1,240	1,080
Total	96,700	82,900	181,000	167,000	337,000	208,000	14,400	9,790

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Worked more than simply cut with a flat surface. Harmonized Tariff Schedule code 6802.91.0500.

<sup>3</sup>Merely cut by sawing or otherwise.

<sup>4</sup>Worked more than simply cut with a flat surface. Other than marble and travertine. Harmonized Tariff Schedule code 6802.92.0000.

<sup>5</sup>Simply cut by sawing or otherwise into rectangular blocks or slabs. Harmonized Tariff Schedule code 2515.12.1000.

Source: U.S. Census Bureau as modified by the U.S. Geological Survey.

TABLE 16  
U.S. IMPORTS FOR CONSUMPTION OF DIMENSION STONE, BY TYPE<sup>1</sup>

Type		2001		2002		Major source for 2002, percentage <sup>2</sup>
		Quantity	Value (thousands)	Quantity	Value (thousands)	
Calcareous stone, other <sup>3</sup>	metric tons	8,590	\$5,390	16,100	\$8,460	Mexico, 30%.
Marble and alabaster <sup>4</sup>	do.	10,200	8,900	15,300	10,100	Italy, 47%.
Sandstone, cut, by sawing or otherwise <sup>5</sup>	do.	657	392	1,030	567	India, 25%.
Slate, roofing	million square feet	16	10,100	11	6,690	China, 36%.
Slate, roughly trimmed or simply cut <sup>5</sup>	do.	10,400	4,770	11,700	5,550	China, 47%.
Slate, worked and articles of slate, and other <sup>6</sup>	do.	NA	63,100	NA	68,400	India, 39%.
Travertine, monumental or building stone and articles thereof <sup>7</sup>	do.	34,000	19,000	40,900	21,800	Turkey, 38%.
Travertine, worked monumental or building stone <sup>8</sup>	do.	65,400	47,500	76,600	41,600	Turkey, 33%.
Other stone, monumental or building stone <sup>9</sup>	do.	11,500	4,310	8,760	5,270	Mexico, 16%.

NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits. Does not include totals shown on tables 14 and 15.

<sup>2</sup>By value.

<sup>3</sup>Other than marble, travertine, and alabaster. Simply cut with a flat surface.

<sup>4</sup>Simply cut with a flat surface.

<sup>5</sup>Rectangular blocks or slabs.

<sup>6</sup>Other than roofing, including agglomerated slate.

<sup>7</sup>Simply cut with a flat surface. Other than tiles and granules.

<sup>8</sup>Dressed or polished but not further worked.

<sup>9</sup>Simply cut with a flat surface. Other than granite, calcareous stone, alabaster, slate, dolomite, quartzite, and steatite.

Source: U.S. Census Bureau.